



Office of the Dean Research
Government Engineering College Kozhikode
Westhill, Kozhikode, Kerala 673005.

ISO 9001:2015 Certified, Programs AE & I, CE, CHE and ME Accredited by NBA

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Research Activities – GEC Kozhikode 2023

1. No. Of Ph.D. Produced so far

AE & I	CE	ME	CHE
1	-0-	-0-	-0-

2. No. Ph.D. Scholars currently doing research in depts as on July 31st 2023.

AE & I	CE	ME	CHE
12	-0-	3	2

3. No. Of faculty members on QIP for higher studies

AE & I	CE	ME	CHE
05	02	1	3

4. Details of Ph. D. Scholars Currently Registered under KTU in Different Depts

SL No,	Department	Name of the Scholar	Year of Registrati on	Category	Supervisor
01	AE & I	Baburaj K V	2020	Part time	Dr. Shajee Mohan B S
		Prakarsha C	2021	Full time	Dr. Shajee Mohan B S
		Latha K V	2021	Part time (centre GEC Trissur)	Dr. Shajee Mohan B S
		Babitha Nair B	2021	Part time	Dr. Baburaj M
		Priyank P	2021	Part time	Dr. Baburaj M
		Sythalakshmi C S	2021	Full time	Dr. Baburaj M
		Jayasree T C	2021	Full time	Dr. Bindima T
		Binci B	2021	Part time	Dr. Bindima T

		Shahana T	2021	Part time	Dr. Bindima T
		Saji Justus	2021	Part time	Dr. Baburaj P (GEC Wayanad)
		Jasmine E	2022	Part time	Dr. Jaya C K (AWH)
		Roshith	2023	Part time	Dr. Baburaj M
02	ME	Siju K	2020	Part time	Dr. Jithesh P T K
		Uapas U S	2019	Full time	Dr. Sreejith B
		Shamin	2021	Part time	Dr. Pradeep V
03	CHE	Suma K	2016	Part time	Dr. Ushakumari E R
		Suji S K	2016	Part Time Kerala Univ	Dr. Ushakumari E R/ Dr. Radhakrishnan
04	CE	---			

5. Details of Ph. D. Scholars Currently doing (As on 2023) Ph.D under QIP/Part-time in Different Depts

SL No	Department	Name Designation of Faculty	Year	Institution Deputed to
01	AE & I	Smt. Shilpi Assistant Professor	2020	NIT Calicut
		Smt. Shanthini K Assistant Professor	2021	NIT Calicut
		Mr. Rashid Ummer T Assistant Professor	2023	IISc Bangalore
		Mr. Sreeraj M Assistant Professor	2023	NIT Trichy
		Mr. Harikrishnan Assistant Professor	2022	Cusat (Part-Time)
02	ME	Mr. Nidhin Sreedas Assistant Professor	2023	NIT Calicut
03	CE	Smt. Nasna Noor Assistant Professor	2023	IIT Bombay
		Smt. Shyba Assistant Professor	2023	IIT Madras
		Dileep Kumar P G Assistant Professor	2017-	CUSAT
04	CHEM	Mr. Adil Muhammed Assistant Professor	2022	IIT Madras

		Ms. Aparna Assistant Professor	2022	IIT Madras
		Mr. Dhaneesh Assistant Professor	2023	NIT Calicut (Part-time)

6. Details of Paper publication (Conferences and Journals) and Patents

Description	Year	AE & I	CE	CHE	ME	ASc	Total
Paers Published in National and International Journals	19-20	5	3	4	9	4	25
	20-21	5	6	5	6	7	29
	21-22	08	3	8	4	3	26
	22-23	6	5	11	11	14	47
Papers Published in National and International Conferences	19-20	4	3	15	14	-	36
	20-21	08	1	0	13	-	22
	21-22	9	1	22	6	-	38
	22-23	24	2	23	12	-	61
Patents	19-20	-	-	-	-	-	0
	20-21	1	-	-	1	-	2
	21-22	1	-	-	3	-	4
	22-23	-0-					0

7. PROPOSAL FOR THE CENTRE OF EXCELLENCE (COE) IN SUSTAINABLE TECHNOLOGIES

Objectives of the Proposed Center of Excellence

- ✓ To identify and develop materials for health and environmental applications.
- ✓ To monitor, analyse, and develop technologies for the control of air pollution.
- ✓ To investigate various techniques for water and waste water treatment, suggest and design suitable treatment systems.
- ✓ To investigate and design sustainable energy systems.
- ✓ To implement waste to energy technologies.
- ✓ To develop appropriate catalysts for process development and enhancement.
- ✓ To analyse and quantify pesticide present in food and water.
- ✓ To provide facilities for training, testing and monitoring environmental pollution.
- ✓ To develop automated systems to support local farmers and seed-growers and small scale industries involved in making food-products.
- ✓ To develop intelligent strategies for traffic control.
- ✓ To develop clean energy production systems.
- ✓ To develop sustainable thermal comfort systems.
- ✓ To do research and development related to automotive pollution.
- ✓ To do research and development related to bio-degradable lubricants.

7.1 Details of Activities proposed under the Center of Excellence by Departments of the College

1. Department of Chemical Engineering:

Project 1: Assessing the urban air quality (indoor and outdoor) and developing a prediction model with ANN

Project 2: Pesticides removal from aqueous solution using bio char. (Ongoing)

Project 3: Kinetic and mass transfer study of CO₂ absorption in sodium hydroxide solution. (Ongoing)

Project 4: Pesticide and heavy metal removal by solar powered nano structured membrane distillation

Project 5: Regeneration of spent FCC catalyst (Ongoing)

2. Department of Applied Electronics & Instrumentation Engineering

1. Develop a system for pesticide detection in vegetables and fruits using Machine Learning techniques.

2. Joint R&D related to Traffic monitoring system, along with Centre of Excellence at Transportation Lab in College of Engineering Trivandrum.

3. Joint research to collaborate with Automotive Mechatronics labs at GEC Barton Hill in developing voice-controlled vehicles.

4. Develop an automated control and instrumentation for dryers, for drying spices.

5. To develop a system for measurement of moisture content in dried food products such as dried coconut and other hill produces.

3. Department of Mechanical Engineering

Sustainable space cooling for thermal comfort

Sustainable Solutions for Clean Energy

Sustainable Lubricants

Advanced Research Facilities for I.C. Engine Fuels & Lubricants

Proposal for computational intelligence-based design of biolubricant with nano friction modifiers

7.2 Estimated Budget for the COE

SL No	Department	Estimated Budgetary Requirement (in Lakhs)
01	Chemical Engineering	436.00
02	Mechanical Engineering	170.08
03	Applied Electronics and Instrumentation Engineering	61.50
Total		667.58

8. Yukthi 2023- The International Conference on Emerging Trends in Engineering



Introduction

Government Engineering College Kozhikode successfully conducted the first edition of International conference on Emerging Trends in Engineering Yukthi in the year 2021. The second edition, Yukthi 2023 was a successful attempt to further explore the avenues in technology through conducting events such as paper presentations, panel discussions, webinars etc. with the active participation of researchers across the Globe. Yukthi 2023 was envisaged to act as a venue for the confluence of the latest ideas, thoughts and innovations of talented minds all over the world. The International Conference was held **10th to 12th April 2023** in the hybrid mode using both online method and in-person modes. Yukthi 2023 also has additional tracks on special topics.

Subtracks

The conference consisted of 4 subtracks organized by the 4 engineering departments of the institute.

a) *International Conference on Emerging Trends in Signal Processing* by the Dept. of Applied Electronics

The conference invited papers on the following fields:

Signal Processing (Audio, Image and Video), Computer Vision, Embedded Systems, VLSI Design, Nano-Electronics, Optoelectronics, Networking, RF Design, Wireless Systems, Communication Systems, Instrumentation Systems, Kinematics, Dynamics and Control of Legged, Wheeled and Tracked Robots, Vision based Systems, Advances in Sensors and Actuators.

Algorithms and Data Structures, Cryptography, Machine Learning, Natural Language Processing, Parallel and Distributed Computing, Computer Networks.

b) *International Conference on Sustainable Solutions for Infrastructure Development* by the Dept. of Civil Engineering

The conference invited papers on the following fields:

Structural Engineering, Computer Applications in Civil Engineering, Structural Health Monitoring, Geotechnical Engineering, Hydraulics and Water Resources Engineering, Green-Engineering, Environmental Engineering and Geoinformatics, Traffic and Transportation Engineering.

c) *International Conference on Process Engineering and Sustainable Technology – (STEP 2023)* by the Dept. of Chemical Engineering.

The conference invited papers on the following fields:

Green Technologies, Biotechnology, Process Design and Safety, Novel Materials, Process Control and Automation, Process Intensification, Nanotechnology, Food and Pharmaceuticals, Catalysis, Polymer Technology, Computational Fluid Dynamics

d) *International Conference on Mechanical Engineering and Energy Technologies-(URJA 2023)* by the Dept. of Mechanical Engineering

The conference invited papers on the following fields:

Thermal Engineering, Fluids and Energy Engineering, Mechanical Design, Materials and Manufacturing, Industrial Engineering and Optimization, Tribology, Nanoscience and Technology

Organisers

The event was effectively organised by the team consisting of faculty members from all the departments of the college. The advisory committee consisted of eminent professors from universities around the globe.

Patron

Dr. Byjubai T. P., Director of Technical Education,
Govt. of Kerala

Chairman

Dr. Sajith P. P., Principal (in Charge), GEC Kozhikode

General Convener

Prof. Sindhu N., Assistant Professor, Dept. of CH, GECK

Organizing Secretary

Dr. Sudheesh R. S., Associate Professor, Dept. of ME, GECK

Conference Coordinators

Dr. Shajee Mohan B. S. & Dr. Abdul Rahman V. (AE&I)

Dr. Pradeep M. Kamath & Prof. Fouad Ebn Muhammed Abdulla (ME)

Prof. Shyja M & Prof. Dhaneesh K. P. (CH)

Prof. Nasma Noor & Prof. Raji Karuna. (CE)

Advisory Committee

Dr. Erwin Fuhrer, Karlsruhe Institute of technology, Germany

Dr. Muhammad Saleem, Jubail Industrial College, Royal Commission for Jubail and Yanbu,
Saudi Arabia

Dr. Nishanth G. Chemmangattuvalappil, University of Nottingham Malaysia

Dr. Sandeep Mouvanal, University of Nottingham, UK

Dr. Vijay John, RIKEN, Japan

Dr. Xavier Serra, University of Pompeu Fabra, Barcelona, Spain

Dr. Athira P, IIT Palakkad

Dr. C. Chandrasekhar, IIT Madras

Dr. John Joseph, IIT Guwahati

Dr. L. S. Ganesh, IIT Madras(Retd.)

Dr. Navin Gopinathan, IIT Ropar

Dr. N Siva prasad, IIT Madras(Retd.) GITAM University

Dr. Sarit Das, IIT Madras
Dr. T Thyagaraj, IIT Madras
Dr. Elizabeth Elias, NIT Calicut(Retd.), Sahrdaya College of Engineering & Technology,
Thrissur
Dr. George K Varghese, NITCalicut
Dr. M.V.L.R. Anjaneyulu, NIT Calicut
Dr. Vaishakh Nair, NIT Surathkal
Dr. V Sivasubramanian, NIT Calicut

Official Sponsors

The conference was sponsored by TEQIP-Phase II. An amount of Rs. 10 lakhs was allocated with the consent and support of the Board of Governors of GEC, Kozhikode.

The kit for the participants was sponsored by Matterlab owned by the Uralungal Labour Contract Co-operative Society Ltd.

Registration Fee

The conference committee fixed the following rates for participation in the event.

Registration Fee

Industrial Delegates/Research Scholars: Rs. 2500/-

/Academics/Students

Participation: Rs. 500/-

Foreign Delegates: \$75/-

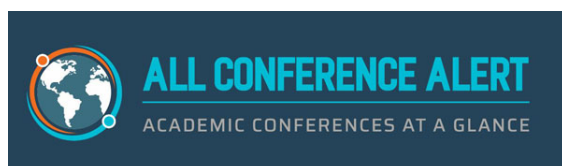
Publication Partner

The globally renowned publisher Elsevier SSRN was selected publishing the papers selected for the conference.



Publicity Partner

The agency “All conference Alerts” played an active role in providing publicity for the conference among researchers and academicians.



**Statistics of the received / Accepted papers for
Yukthi 2023**

Track	No. of submissions	Accepted
Emerging Trends in Signal Processing	47	23
Sustainable solutions for Infrastructure Development	44	24
Process Engineering Sustainable Technology	45	29
Mechanical Engineering and Energy Technologies	26	19

9. Research Activities under seed money project:

SL No	Dept	Title of the Project	Investigator	Estimated Expenses	Sanctioned amount so far
1	CHEM	KTU-CERD-RSM K.T.U CERD Research Seed Money project 'Cost effective packed bed column with zinc oxide coated regenerated spent FCC catalyst system for the water treatment'	Prof. Adil Muhammed	Rs. 2 Lakhs	Rs. 60000.00
2	CHEM	KTU-CERD-RSM pesticide removal from aqueous solution using bio biochar	Smt. Suma K	Rs. 2 Lakhs	Nil
3	CHEM	TEQIP-II Research Seed Money project 'Kinetic and mass transfer study of CO ₂ absorption in sodium hydroxide solution' –	Prof. Adil Muhammed	Rs 2 Lakhs	Nil

10. Research Activities under KTU CERD in 2022:

SL No	Dept	Total No. Of proposals submitted	Estimated Amount (Rs)	Sanctioned No. Of projects
1	AE & I/ECE	16	354075.00	1
2	CE	1	50000.00	0
3	CHE	0	0.0	0
4	ME	7	246700.00	0

Dr. Shajee Mohan B S
Professor and Dean Research
GEC Kozhikode